Clinicians' Perspectives and Experiences Regarding Maternity Care in Women With Vulvodynia

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Abstract

Objective: To assess clinicians' frequency of and comfort with provision of maternity care for women with vulvodynia, their beliefs and practices regarding delivery mode, and frequency of maternal requests for Caesarean section (CS).

Methods: We invited physicians and midwives to complete a questionnaire assessing their frequency of contact with pregnant women with vulvodynia; their level of comfort providing antenatal, intrapartum, and postpartum care for these women; whether they believed that vulvodynia is an indication for elective CS and the frequency of making this recommendation; and the number of patients with vulvodynia who strongly requested CS.

Results: Of the 140 participating clinicians, 91 were physicians and 49 were midwives. Most physicians (n = 64; 70.4%) saw patients with vulvodynia at least once per month. Clinicians who saw women with vulvodynia were most likely to see pregnant women with vulvodynia rarely (n = 54; 40.3%) or every six to 12 months (n = 29; 21.6%). Almost one third (n = 44; 31.4%) were not comfortable providing maternity care for these women, and 16.4% (n = 23) agreed that vulvodynia was an indication for elective CS. Of respondents who provided maternity care for women with vulvodynia, 15.4% (n = 18) had recommended CS; the most common reason for doing so was potential worsening of vulvar symptoms. The majority of clinicians who provided maternity care for women with vulvodynia (n = 73; 62.4%) indicated that maternal requests for CS were rare.

Conclusion: Almost one third of participating clinicians (31.4%) were not comfortable providing maternity care for women with vulvodynia. Despite infrequent maternal requests, a minority of clinicians believed that vulvodynia is an indication for CS and/or made that recommendation. Additional research and education are needed to provide optimal obstetric care for women with vulvodynia.

Key Words: Vulvodynia, pregnancy, delivery, obstetrical, physicians, midwifery

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Résumé

Objectif : Évaluer la fréquence et l'aisance des cliniciens quant à la prestation de soins de maternité aux femmes souffrant de vulvodynie, leurs croyances et leurs pratiques liées au mode d'accouchement, ainsi que la fréquence des demandes faites par les mères à l'égard de la césarienne.

Méthodes : Nous avons invité des médecins et des sages-femmes à remplir un questionnaire ayant permis d'évaluer la fréquence de leurs contacts avec des femmes enceintes touchées par la vulvodynie; leur niveau d'aisance quant à la prestation de soins anténataux, intrapartum et postpartum à ces femmes; leur opinion sur la vulvodynie en tant qu'indication de césarienne élective et la fréquence de cette recommandation; enfin, le nombre de patientes atteintes de vulvodynie qui ont réclamé une césarienne avec insistance.

Résultats : Parmi les 140 cliniciens participants, 91 étaient médecins et 49 étaient sages-femmes. La plupart des médecins (n = 64; 70,4 %) recevaient leurs patientes touchées par la vulvodynie au moins une fois par mois. Les cliniciens qui intervenaient auprès de femmes aux prises avec cette affection offraient rarement des consultations aux femmes enceintes (n = 54; 40,3 %), sinon tous les 6 à 12 mois (n = 29; 21,6 %). Près du tiers (n = 44; 31,4 %) des participants se montraient réticents à dispenser des soins de maternité à ces femmes, et 16,4 % (n = 23) d'entre eux ont convenu que la vulvodynie constituait une indication de césarienne élective. Parmi les répondants qui prodiguaient des soins de maternité aux femmes atteintes de vulvodynie, 15,4 % (n = 18) avaient recommandé la césarienne; l'aggravation potentielle des symptômes vulvaires constituait le motif le plus courant de cette intervention. La majorité des cliniciens qui fournissaient des soins de maternité aux femmes souffrant de vulvodynie (n = 73; 62,4 %) ont affirmé que les mères demandaient rarement de subir une césarienne.

Conclusion : Près du tiers des cliniciens participants (31,4 %) se montraient réticents à offrir des soins de maternité aux femmes touchées par la vulvodynie. Malgré la rareté des demandes faites par les mères, une minorité de cliniciens ont estimé que la vulvodynie constituait une indication de césarienne et (ou) ont formulé cette recommandation. Des activités de recherche et de formation supplémentaires s'avèrent donc nécessaires à la prestation de soins obstétricaux de qualité optimale aux femmes souffrant de vulvodynie.

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INTRODUCTION

Vulvodynia, or chronic vulvar pain without obvious etiology, is a distressing health concern that affects approximately 16% of women during their lifetime.[1,2] The most common type of vulvodynia in women of reproductive age is provoked vestibulodynia (PVD)[3] characterized by allodynia (pain from a non-noxious stimulus) involving all or part of the introitus. Because there is a well-recognized overlap between PVD and reflexive, involuntary pelvic muscle tightening (vaginismus), the more encompassing diagnostic entity genito-pelvic pain/penetration disorder is now used.[4]

Women with vulvodynia have unique obstetrical needs.[5] Research on this topic has been limited, but a large retrospective Swedish study of 2554 women with diagnosed PVD and/or vaginismus found significantly more Caesarean sections that were maternally requested, elective, and emergency compared with women without such a diagnosis.[6] Another study found that almost half of women with prior vestibulectomy for PVD delivered by Caesarean section (CS).[7] Forty-three percent of these procedures were performed as a result of the previous vestibulectomy; it is not clear whether the vestibulectomy-related procedures were maternally requested, elective, or emergency.[7] To date, no studies have assessed clinicians' experiences in providing maternity care for this population.

The main objectives of this study were to assess (1) the frequency with which physicians and midwives provide maternity care for women with vulvodynia, (2) whether providers are comfortable providing this care for women with vulvodynia, and (3) clinicians' beliefs and practices regarding mode of delivery for women with vulvodynia. Another aim was to assess how many patients with vulvodynia request CS. This study was exploratory in nature, and specific hypotheses were not generated. However, we did examine potential differences between physicians and midwives and between care providers who were comfortable providing obstetrical care for women with vulvodynia and care providers who were not.

METHODS

We invited physicians and midwives to complete a brief questionnaire assessing their management of pregnancy and childbirth in women with vulvodynia. Our target audience for this study consisted of physicians and midwives who provided antenatal, intrapartum, or postpartum (maternity) care. Potential respondents were recruited by distribution of questionnaire hard copies and/or posters to physician and midwifery offices and at local rounds/meetings and conferences; by listserv notifications (Section of Obstetrics and Gynaecology of the British Columbia Medical Association, Midwives Association of British Columbia, National Vulvodynia Association); a newsletter submission (Divisions of Family Practice, British Columbia); and word of mouth. Participants were provided with the option to complete the questionnaire electronically or on paper. The questionnaire contained 36 questions and required five minutes or less to complete. Although no identifying information was required to participate in the study, all respondents had the option to enter a drawing to win a prize; to enter the drawing, respondents were asked to provide an email address. In addition, participants were informed that the first 10 respondents would receive a $10 electronic gift certificate. Completion of the questionnaire indicated consent to participate, and a cover letter informed participants that their responses were voluntary.

Information collected in this study is described in the following sections.

Demographic and Practice Characteristics

Respondents were asked to provide background information, including age, gender, current medical specialty, population of the town or city in which they practised, practice setting (e.g., office), and number of years in clinical practice.

Frequency of Contact With Women With Vulvodynia

Respondents were asked the following two questions, with seven response options ranging from "daily" to "never": "How often do you see women with vulvodynia (chronic vulvar pain) in your practice?" and "How often do you see pregnant women with vulvodynia (chronic vulvar pain) in your practice?" They were also asked, "Of the women with vulvodynia (chronic vulvar pain) that you see in your practice, how many do you think have the type of vulvodynia known as provoked vestibulodynia (pain with vaginal penetration)?" Possible responses for this question were "all or almost all," "more than half," "about half," "less than half," and "few to none"; respondents could also indicate whether they did not see women with vulvodynia in their practice.

Comfort Providing Maternity Care for Women With Vulvodynia

Respondents were asked to respond with "yes" or "no" to the following question: "Are you comfortable managing ante/intra/post-partum care for women with vulvodynia?" Respondents who answered "no" were also asked to whom they referred their pregnant patients with vulvodynia for maternity care; possible answers were "ob/gyn," "family

doctor," "midwife," and "other" (with a free-response option).

Vulvodynia as an Indication for CS

Respondents were asked to respond with "yes" or "no" to the following question: "Do you think that vulvodynia is an indication for elective Caesarean delivery?"

Clinician Recommendations Regarding Mode of Delivery

Respondents were asked to respond with "yes" or "no" to the following question: "Have you ever recommended that a woman have a Caesarean over vaginal delivery because of her vulvar pain from vulvodynia?" In addition, respondents were asked, "How often have you recommended that women have a Caesarean over vaginal delivery because of their vulvar pain from vulvodynia?" Possible responses to this question were "always or almost always," "most times (more than half the time)," "sometimes (about half the time)," "a few times (less than half the time)," "almost never or never," or "not applicable—I do not see women with vulvodynia in my practice." Respondents who indicated having recommended CS because of vulvar pain from vulvodynia were also asked to report any other reasons they had for making such a recommendation for affected women, using an open-ended format.

Patient Requests for CS

Respondents were asked, "How many of your pregnant patients with vulvodynia strongly requested a Caesarean delivery because of their vulvar pain?" Possible answers were "all or almost all," "more than half," "about half," "less than half," "few to none," and "not applicable—I do not see women with vulvodynia in my practice." We did not define the word "strongly" in this item; the interpretation of this question was left open.

Apart from demographic and practice information, only respondents who reported providing maternity care and those who were currently in clinical practice (ie, not retired or on leave) were asked to respond to the aforementioned items. Participants for this study were thus currently practising clinicians who provided maternity care.

Descriptive statistics were used to report the sample demographic and practice characteristics and outcome variables. Independent sample t tests (for continuous variables) and chi-square tests (for categorical variables) also examined potential differences between physicians and midwives and between those care providers who were comfortable providing maternity care for women with vulvodynia and those who were not. If chi-square analyses indicated that expected frequencies in a two-by-two table were < 5, Fisher exact test was used. All data were analyzed using SPSS Version 22.0 (IBM Corp., Armonk, NY), and statistical significance was set at $P \leq 0.05$. Due to missing data, not all frequency data reported add up to 100%.

Study procedures were approved by the Behavioural Research Ethics Board at the University of British Columbia and the Vancouver Coastal Health Research Institute.

RESULTS

In total, 186 clinicians responded to the larger study between June 2013 and September 2014; of these, 58 reported practising midwifery, 119 reported practising medicine, six reported practising physical therapy, one reported practising complementary therapies, and two did not specify their current area of practice. The responses from the physical therapists, the complementary therapist, the respondents whose area of practice was not indicated, and one respondent who was practising neurology were excluded from analysis (n = 10). We also excluded the responses from four physicians and five midwives who had large amounts of missing data, from two physicians who were retired from all clinical practice, from three midwives who were on leave, from two physicians who were in training, and from 19 physicians and one midwife who indicated that they did not provide maternity care. The final sample size thus consisted of 140 clinicians (91 physicians, 49 midwives).

The demographic and practice characteristics of respondents are shown in Table 1. All midwives included in our sample were female, and there was a significant relationship between provider type (physician or midwife) and gender (chi-square [1] = 20.56, $P < 0.001$). We also found significant relationships between provider type and practising in a hospital with labour and delivery services (chi-square [1] = 12.10, $P = 0.001$) and between provider type and practising in a home setting (chi-square [1] = 95.70, $P < 0.001$). Physicians also reported a significantly greater number of years in clinical practice than midwives (t [82.19] = 1.99, $P = 0.05$).

Frequency of Contact With Women With Vulvodynia

The frequency with which respondents reported seeing women with vulvodynia in their practice is shown in Table 2. Respondents most often reported that they saw women with vulvodynia at monthly intervals (n = 34; 24.3%). Among the 134 respondents who reported seeing women with vulvodynia, over 60% believed that more than

Table 1. Sample demographic and practice characteristics (n = 140)

Characteristic	Total		Physicians		Midwives	
	n	Mean ± SD or %	n	Mean ± SD or %	n	Mean ± SD or %
Age (years)	139	44.96 ± 10.43	90	45.88 ± 9.40	49	43.29 ± 12.04
Years in practice[a]	139	13.74 ± 9.87	90	15.03 ± 8.93	49	11.37 ± 11.11
Gender[b]						
Female	110	78.6	61	67.0	49	100
Male	30	21.4	30	33.0	0	0
Specialty						
Obstetrics and gynaecology	70	50.0	70	76.9	-	-
Obstetrics	5	3.6	5	5.5	-	-
Gynaecology	1	0.7	1	1.1	-	-
Family medicine	11	7.9	11	12.1	-	-
Internal medicine	3	2.1	3	3.3	-	-
Midwifery	49	35.0	-	-	49	100
Other	1	0.7	1	1.1	-	-
Population of practice location						
< 10 000	11	7.9	6	6.6	5	10.2
< 50 000	22	15.7	15	16.5	7	14.3
< 100 000	20	14.3	12	13.2	8	16.3
≥ 100 000	86	61.4	58	63.7	28	57.1
Practice setting						
Office	124	88.6	78	85.7	46	93.9
Hospital, excluding labour and delivery services	19	13.6	16	17.6	3	6.1
Hospital, including labour and delivery services[c]	116	82.9	68	74.7	48	98.0
Home[d]	42	30.0	2	2.2	40	81.6
Other	3	2.1	3	3.3	0	0

Note: Percentages may not add up to 100 as a result of missing data or ability to indicate more than one response option in any given category (e.g., practice setting).

[a]Indicates significant relationship when physicians and midwives compared, $P = 0.05$.

[b]Indicates significant relationship between care provider type (physician or midwife) and gender, $P < 0.001$.

[c]Indicates significant relationship between care provider type and practising in a hospital with labour and delivery services, $P = 0.001$.

[d]Indicates significant relationship between care provider type and practising in a home setting, $P < 0.001$.

half (n = 55; 41.0%) or all or almost all (n = 27; 20.1%) of these patients experienced PVD.

To compare physicians and midwives on the frequency with which they saw women with vulvodynia, responses were collapsed into the following categories: monthly or more frequently, every three to six months, every six to 12 months, or rarely (less than yearly)/never. The relationship between care provider type (physician or midwife) and the frequency of seeing women with vulvodynia was significant (chi-square [3] = 41.66, $P < 0.001$). Examination of the standardized residuals suggested that physicians saw women with vulvodynia more frequently (monthly or more) than midwives and were less likely to report rarely or never seeing such women in their practice; midwives appeared more likely than physicians to see women with vulvodynia every six to 12 months or rarely/never and less likely to see these women monthly or more frequently.

The frequency with which the respondents who saw women with vulvodynia in general reported seeing pregnant women with vulvodynia in their practice is shown in Table 3. Respondents most commonly reported that they saw pregnant women with vulvodynia rarely (less than yearly) (n = 54; 40.3%). Overall, however, almost one third of the respondents who saw women with vulvodynia in general indicated that they saw pregnant women with vulvodynia at least every six months (n = 43; 32.1%), and more than half indicated that they saw these women at least yearly (n = 72; 53.7%). Using the collapsed response categories previously indicated, no significant relationship was found between provider type (physician or midwife) and frequency of seeing pregnant women with vulvodynia.

Comfort Providing Maternity Care for Women With Vulvodynia

The majority of respondents reported feeling comfortable providing maternity care for women with vulvodynia

Table 2. Frequency with which physicians (n = 91) and midwives (n = 49) reported seeing women with vulvodynia in their practice

	Total		Physicians		Midwives	
Frequency[a]	n	%	n	%	n	%
Daily	10	7.1	9	9.9	1	2.0
Weekly	28	20.0	28	30.8	0	0
Monthly	34	24.3	27	29.7	7	14.3
Every 3 to 6 months	19	13.6	12	13.2	7	14.3
Every 6 to 12 months	19	13.6	6	6.6	13	26.5
Rarely (less than yearly)	24	17.1	7	7.7	17	34.7
Never	6	4.3	2	2.2	4	8.2

[a]Significant relationship found between care provider type (physician or midwife) and frequency of seeing women with vulvodynia, $P < 0.001$.

(n = 94; 67.1%). However, 31.4% (n = 44) of the sample, which was one quarter of physicians (n = 23; 25.3%) and almost half of the midwives (n = 21; 42.9%), reported that they were not comfortable providing such care; the relationship between care provider type (physician or midwife) and comfort was significant (chi-square [1] = 4.21, $P = 0.04$).

The characteristics of the respondents with regard to comfort providing maternity care for women with vulvodynia are shown in Table 4. Clinicians who were not comfortable providing maternity care for women with vulvodynia had significantly fewer years of practice than respondents who were comfortable providing such care (t [135] = −2.01, $P = 0.05$). There was a significant relationship between feeling comfortable providing maternity care for women with vulvodynia and seeing such women in practice (Fisher exact test, $P = 0.002$). We also found significant relationships between feeling comfortable and seeing patients in a home setting (chi-square [1] = 6.88, $P = 0.009$) and in a setting other than office, hospital, or home (Fisher exact test, $P = 0.03$). A greater proportion of clinicians who were not comfortable providing maternity care for women with vulvodynia reported seeing patients in a home or other setting; no clinicians who were comfortable providing care reported practising in a setting outside of the office, hospital, or home.

The majority of the respondents who were not comfortable reported that they referred pregnant women with vulvodynia to an obstetrician-gynaecologist for maternity care (n = 26; 59.1%). Fifteen respondents (34.1%) provided other responses to this question, including referral to a vulvar/vulvodynia clinic (n = 5), pelvic floor physiotherapist (n = 2), or local women's hospital (n = 1), or to an obstetrician-gynaecologist with the referring clinician continuing primary care (n = 1). Despite not being comfortable providing maternity care for women with vulvodynia, three respondents also reported that they did not refer these patients. One of these clinicians specifically indicated that he or she did not inquire about genital pain during antenatal care and thus did not refer patients.

Vulvodynia as an Indication for CS

Even though most respondents (n = 111; 79.3%) did not think that vulvodynia was an indication for a woman to have an elective CS, 16.4% (n = 23) thought that it was an

Table 3. Frequency with which physicians (n = 89) and midwives (n = 45) reported seeing pregnant women with vulvodynia in their practice

	Total		Physicians		Midwives	
Frequency	N	%	N	%	N	%
Daily	0	0	0	0	0	0
Weekly	3	2.2	3	3.4	0	0
Monthly	20	14.9	15	16.9	5	11.1
Every 3 to 6 months	20	14.9	13	14.6	7	15.6
Every 6 to 12 months	29	21.6	15	16.9	14	31.1
Rarely (less than yearly)	54	40.3	37	41.6	17	37.8
Never	8	6.0	6	6.7	2	4.4

Note: Data presented only for those respondents who reported seeing women with vulvodynia in general in their practice.

Table 4. Characteristics of the respondents who were comfortable (n = 94) and not comfortable (n = 44) providing maternity care for women with vulvodynia

	Comfortable		Not comfortable		
Characteristic	n	Mean ± SD or %	n	Mean ± SD or %	*P*
Age (years)	93	45.77 ± 10.30	44	43.93 ± 10.46	NS
Years in practice	93	15.05 ± 9.84	44	11.48 ± 9.51	0.05
Gender					NS
Female	70	74.5	39	88.6	
Male	24	25.5	5	11.4	
Provider type					0.04
Physician	66	70.2	23	52.3	
Midwife	28	29.8	21	47.7	
See women with vulvodynia (including pregnant women)					0.002
Yes	90	95.7	34	77.3	
No	4	4.3	10	22.7	
Population of practice location[a]					NS
< 100 000	33	35.1	20	45.5	
≥ 100 000	60	63.8	24	54.5	
Practice setting					
Office	85	90.4	38	86.4	NS
Hospital, excluding labour and delivery services	15	16.0	4	9.1	NS
Hospital, including labour and delivery services	81	86.2	33	75.0	NS
Home	22	23.4	20	45.5	0.009
Other	0	0	3	6.8	0.03

Note: Percentages may not add up to 100 as a result of missing data or ability to indicate more than one response option in any given category (e.g., practice setting). Two respondents did not answer the item pertaining to comfort providing maternity care for women with vulvodynia.

NS: Not significant.

[a]To meet chi-square assumptions, population response options were dichotomized when comparing respondents who were comfortable and not comfortable.

indication (the remaining 4.3% did not respond). There was no significant relationship between care provider type (physician or midwife) and belief that vulvodynia is an indication for elective CS or between clinicians' comfort providing maternity care for women with vulvodynia and this belief.

Clinician Recommendations Regarding Mode of Delivery

To explore actual obstetrical care, we restricted the remaining analyses to 117 respondents (76 physicians, 41 midwives) who did not indicate at any point in the questionnaire that they did not see women with vulvodynia in their practice and who reported seeing pregnant women with vulvodynia.

Among these respondents, most had not recommended CS for pregnant women with vulvodynia because of vulvar pain (82.1%, n = 96), whereas a much smaller proportion had recommended CS for this reason (15.4%, n = 18). There was no significant relationship between care provider type (physician or midwife) and ever having recommended that a woman have a CS because of vulvar pain from vulvodynia. There was also no significant relationship between comfort providing maternity care for women with vulvodynia and ever having recommended CS because of vulvar pain.

We next examined how often respondents had recommended CS to women with vulvodynia because of vulvar pain (Table 5). None of the respondents who had done so reported that they had made this recommendation most times (more than half the time), almost always, or always. Furthermore, the respondents who believed that vulvodynia was an indication for elective CS were not necessarily the same respondents who had made such a recommendation; in our restricted sample, 10 respondents reported having recommended CS because of vulvar pain even though they also reported that vulvodynia was not an indication for elective CS. In addition, eight respondents believed that vulvodynia was an indication for elective CS but had not made such a recommendation, and seven respondents reported believing that vulvodynia was an indication for CS and had recommended this mode of delivery accordingly. One respondent reported making such a recommendation but did not report whether he or she believed CS was indicated for vulvodynia.

Table 5. Frequency with which physicians (n = 14) and midwives (n = 4) reported having recommended CS to women because of vulvar pain from vulvodynia

Frequency	Total		Physicians	Midwives
	n	%	n	n
Always or almost always	0	0	0	0
Most times (more than half the time)	0	0	0	0
Sometimes (about half the time)	3	16.7	2	1
A few times (less than half the time)	8	44.4	7	1
Almost never or never	7	38.9	5	2

Note: Data presented only for those respondents who reported having ever made such a recommendation (n = 18 in our restricted sample of providers who saw women with vulvodynia, including pregnant women with vulvodynia).

Finally, the open-ended responses provided by 15 of 18 respondents who had recommended CS for a woman with vulvodynia were examined and categorized regarding their reasons (other than vulvar pain) for making this recommendation. A variety of reasons were provided; concern on the part of patients about worsening vulvar symptoms was the most common (Table 6).

Patient Requests for CS

A majority of the 117 respondents (n = 73; 62.4%) in the restricted sample reported that few to none of their pregnant patients with vulvodynia had strongly requested CS because of vulvar pain. An additional 20.5% (n = 24) of these respondents reported that less than half of their pregnant patients with vulvodynia had made such a request, followed by those respondents who reported that approximately half (n = 8, 6.8%), more than half (n = 5, 4.3%), and all or almost all (n = 4, 3.4%) of their patients with vulvodynia had strongly requested CS because of vulvar pain. The relationships between care provider type (physician or midwife) and maternal requests and between care provider comfort and maternal requests were not assessed because the expected cell frequencies for chi-square were not met.

Table 6. Reasons provided by clinicians for recommending CS for women with vulvodynia

Reason	Total		Example
	n	%	
Potential worsening of symptoms or patient fear of future pain/ trauma to vulva	5	33.3	"Previous vaginal birth made vulvodynia worse so likely to happen again."
Patient anxiety	4	26.7	"Intense fear and anxiety related to the vulvodynia that does not resolve by term."
Patient fear of vaginal birth	4	26.7	"Based on patient request, I would perform a CS. Especially if they are fearful of a vaginal delivery and effect it would have on their vulvar pain. This is rare and I have only done it once."
Previous vulvar surgery	3	20.0	"I have had 2 patients in 15 [years] who had successful vestibulectomies, PT work and counselling who feel very protective of their (pain-free) vestibule/introitus. For them, having a [CS] allowed them the ease of mind that their hard work would not be 'ruined' by someone who wasn't careful with their repair (should she tear her vagina/vulva during labour)…."
Patient experiencing extreme symptoms or pain	2	13.3	"Refused various analgesia methods and was uncontrolled, jumping up the bed with her pain."
Patient having difficulty coping	2	13.3	"Have only once recommended [CS] for a woman who was so terrified of birth and pain that she was unable to cope with any other plan."
Recommended only if requested or necessary	2	13.3	"… it would be far more often a patient request my suggestions and I would never suggest if their preference was for a vaginal birth."
Other	2	13.3	"Depends on individual circumstances and informed consent."
Obstetrical indications	1	6.7	"I believe this is truly patient choice, we have a long discussion about risks and benefits of both vaginal and Caesarean delivery. Otherwise if a patient prefers vaginal delivery I would only recommend Caesarean based on obstetrical indications."

Note: Only includes responses from 15 of the 18 respondents in our restricted sample who reported having ever made such a recommendation. This item was open-ended and respondents could report multiple reasons; thus percentages do not add up to 100.

DISCUSSION

In this study of 140 physicians and midwives who provided maternity care, almost one third of respondents were not comfortable providing maternity care to women with vulvodynia. Furthermore, only a minority advocated elective CS on the basis of vulvar pain. Those clinicians who recommended CS were not necessarily the same clinicians who believed it to be the correct mode of delivery for women with vulvodynia; only seven respondents had both considered CS to be the most appropriate mode of delivery and recommended it accordingly. Thirdly, strong maternal requests for CS were infrequently made to this group of care providers.

Given that approximately 8% of women may experience symptoms of vulvodynia by age 40,[8] it is of major concern that almost one third of care providers willing to complete questionnaires on the subject admitted to being uncomfortable providing maternity care for affected women. That one respondent reported never asking about vulvar pain is also enlightening. Our study did not explore reasons for clinicians' lack of comfort, and these reasons need to be explored in future research. However, the main reasons endorsed for recommending CS apart from vulvar pain (the woman's fear of trauma, her anxiety, and her fear of vaginal delivery) may be relevant. We strongly recommend more education in medical and midwifery schools and at the postgraduate level to address clinicians' knowledge of vulvodynia, particularly of PVD, and to increase skills to manage patients' fears and difficulties with examination. We also found a significant difference between physician and midwife respondents with regard to their level of comfort providing maternity care to women with vulvodynia; almost half of midwives reported not feeling comfortable. We therefore particularly urge that more opportunity be made available for midwives to develop confidence when working with such women. A previous population-based study in Sweden indicated that younger (vs. older) women with severe dyspareunia more often consulted a midwife and less often a physician, further emphasizing the need for midwives to develop comfort providing care for women with vulvar pain.[9]

It is notable that most respondents did not believe that vulvodynia is an indication for CS. Although few studies have examined pregnancy and delivery outcomes in women with vulvodynia, recent research suggests that affected women may be more likely to undergo CS than control women.[6,10] Patient anxiety was noted to be a factor underlying approximately one quarter of the recommended Caesarean sections. Women with vulvodynia are 10 times more likely to experience a premorbid anxiety disorder than women without vulvodynia.[11] Anxiety related to childbirth has been shown to decrease with the use of psychological strategies such as cognitive behavioural therapy in women without vulvar pain,[12,13] suggesting that referral to mental health professionals may be indicated. Furthermore, one third of the recommended Caesarean sections stemmed from concern about potential worsening of symptoms, despite the fact that there are almost no empirical data on the impact of delivery mode on vulvodynia pain.

With regard to the 10 respondents who reported having recommended CS despite believing that vulvodynia was not an indication for elective CS, some may have gained experience and knowledge and may now have changed their practice. Others may have interpreted "recommend" to include a recommendation because of the woman's distress unless an elective CS was planned. More research is needed to understand what factors may drive CS in women with vulvodynia and to assist decision-making regarding mode of delivery. Complications of vaginal delivery when vulvodynia is present and subsequent dyspareunia after different modes of delivery must also be explored.

We found no significant differences between physicians and midwives with regard to beliefs and recommendations regarding CS for women with vulvodynia. Women in general tend to have specific preferences when choosing an obstetrical care provider,[14] but it is not known whether pregnant women with vulvodynia are likely to seek out a specific type of care provider. There was a difference between physicians and midwives in our sample regarding their level of comfort dealing with these patients; the lack of differences between physicians and midwives with regard to CS in the context of vulvodynia, however, may be reassuring to women who have limited availability of care providers or who are concerned that a specific type of care provider may be more likely to endorse certain practices when attending to pregnant women with vulvar pain.

Our study had some limitations. First, our sample was selective and may not be representative of the general population of maternity care providers. Respondents were self-selected; they voluntarily completed a study about vulvodynia and thus may have been more knowledgeable about and comfortable with this pain condition than others who did not respond. For example, part of our recruitment was through the National Vulvodynia Association, and we may therefore have recruited care providers with a particular interest in vulvar pain. We did, however, use broad recruitment strategies in hopes of mitigating this

bias. The majority of respondents were comfortable providing pregnancy-related care to women with vulvodynia, and more than half of the sample reported seeing women with vulvodynia monthly or more frequently. Some of our questions also used a dichotomous (yes/no) format, which does not provide detailed information regarding the variables of interest.

CONCLUSION

Almost one third of clinicians in this study were not comfortable providing maternity care for women with vulvodynia. Despite infrequent maternal requests, a minority of clinicians believed vulvodynia is an indication for CS and/or made that recommendation. Taken together, our findings highlight the need for additional research and education to allow for optimal maternity care in this context. Future research is needed to determine whether the current results are generalizable to a larger population of maternity care providers. Additional research should also explore why care providers may not feel comfortable providing maternity care for women with vulvodynia and identify strategies that can help them feel more comfortable.

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